

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

Roof Runoff Management

(Number)

Code 558

DEFINITION

A facility for collecting, controlling, and disposing of runoff water from roofs.

PURPOSES

To prevent roof runoff water from flowing across concentrated waste areas, barnyards, roads and alleys, and to reduce pollution and erosion, improve water quality, prevent flooding, improve drainage, and protect the environment.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where: (1) a roof runoff management facility is included in an overall plan for a waste management system; (2) roof runoff water may come in contact with wastes or cause soil erosion; and (3) barnyard flood protection or improved drainage is needed.

CRITERIA

Capacity. Design of roof runoff management facilities shall be based on the runoff from a 10-year frequency, 5-minute rainfall except that a 25-year frequency, 5-minute rainfall shall be used to design such facilities for exclusion of roof runoff from waste treatment lagoons, waste storage ponds, or similar practices. There is little difference in the magnitude of these rainfall amounts for Indiana. Therefore, all gutters will be designed to carry the P_{25-5} min. rainfall of 0.60 inches unless a more specific detailed site analysis is warranted.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

The downspout discharges must equal or exceed the gutter flow rate.

Materials. Roof gutters and downspouts may be made of aluminum, galvanized steel, wood, or plastic. Aluminum gutters and downspouts shall have a nominal thickness of at least 0.027 and 0.020 inches, respectively. Galvanized steel gutters and downspouts shall be at least 29 gage. Wood shall be clear and free of knots. A water-repellent preservative shall be applied to the flow area of wood other than redwood, cedar, or cypress. Plastics shall contain ultraviolet stabilizers. Dissimilar metals shall not be in contact with each other.

Supports. Gutter supports shall have sufficient strength to withstand anticipated water, snow, and ice loads. They shall have a maximum spacing of 24 inches. Wood gutters shall be mounted on fascia boards using furring blocks that are a maximum of 24 inches apart. Downspouts shall be securely fastened at the top and bottom with intermediate supports that are a maximum of 5 feet apart.

Outlets. The water from roof runoff management facilities may empty into surface drains or underground outlets, or onto the ground surface. When downspouts empty onto the ground surface, there shall be an elbow to direct water away from the building and splash blocks or other protection shall be provided to prevent erosion. Underground Outlet Standard 620 shall apply to the portion of outlets that are under ground.

Protection. Roof runoff management facilities and outlets shall be protected from damage by livestock and equipment. Where appropriate, snow and ice guards may be installed on roofs to protect gutters and reduce the hazard to humans and animals below. Gutters may be installed below the projection of the roof line to further reduce gutter damage from snow and ice.

CONSIDERATIONS

No special considerations have been identified for this practice.

PLANS AND SPECIFICATIONS

Plans and specifications for installing roof runoff management facilities shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Specifications - Gutters, downspouts, and associated hardware shall be of similar material.

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Hardware and accessories shall be of sufficient strength to secure the gutters and downspouts. Fasteners shall be securely anchored in a manner, which will not prevent the entry of water into the gutter.

OPERATION AND MAINTENANCE

A maintenance program shall be established by the landowner/user to maintain the functional capacity of the gutter system. Items to consider include but are not limited to:

1. Keep gutters and downspouts clean and free of obstructions that reduce flow.
2. Repair all broken or displaced gutters, downspouts, and supports to insure proper functioning.
3. Periodically inspect all components of the gutter system.
4. Repair all damaged outlets for the gutter system.